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TO: Sharon Wong
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VIA: William M. Draper, PhD, Chief 
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850 Marina Bay Parkway
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DATE: October 01, 2015

SUBJECT: Federal Revised Total Coliform Rule (RTCR) Analytical Methods for Drinking Water

The CDPH Drinking Water and Radiation Laboratory Branch has compiled the following list of methods acceptable for water quality testing for compliance with the Federal RTCR.

Total coliform presence absence testing:

1. Lactose Fermentation, Standard Total Coliform Fermentation Technique (Standard Methods 9221 B.1, B.2 (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9221 B.1, B.2-99, -06)
2. Lactose Fermentation, Presence-Absence Coliform Test (Standard Methods 9221 D.1, D.2 (20th ed.; 21st ed.), Standard Methods Online 9221 D.1, D.2-99)
3. Membrane Filtration, Standard Total Coliform Membrane Filtration Procedure (Standard Methods 9222 B (20th ed.; 21st ed.), Standard Methods Online 9222 B-97)
4. Membrane Filtration, Delayed-Incubation Total Coliform Membrane Filtration Procedure (Standard Methods 9222 C (20th ed.; 21st ed.), Standard Methods Online 9222 C-97)
5. Membrane Filtration, Membrane Filtration Using MI medium (EPA Method 1604)
6. Membrane Filtration, m-ColiBlue24® Test
7. Membrane Filtration, Chromocult
8. Enzyme Substrate Method, Colilert® (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-97, -04)



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9. Enzyme Substrate Method, Colilert-18® (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-04)
10. Enzyme Substrate Method, Colisure® (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-97, -04)
11. Enzyme Substrate Method, E*Colite® Test
12. Enzyme Substrate Method, ReadyCult® Test
13. Enzyme Substrate Method, modified Colitag® Test
14. Enzyme Substrate Method, Tecta EC/TC

E. coli presence absence testing:

1. Lactose Fermentation, *E. coli* Procedure Using Fluorogenic Substrate (Standard Methods 9221 F.1 (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9221 F.1-06)
2. Membrane Filtration, MF Partition Procedure (Standard Methods 9222 G.1 c(1,2) (20th ed.; 21st ed.))
3. Membrane Filtration, Membrane Filtration Using MI medium (EPA Method 1604)
4. Membrane Filtration, m-ColiBlue24® Test
5. Membrane Filtration, Chromocult
6. Enzyme Substrate Method, Colilert® (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-97, -04)
7. Enzyme Substrate Method, Colilert-18® (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-04)
8. Enzyme Substrate Method, Colisure® (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-97, -04)
9. Enzyme Substrate Method, E*Colite® Test
10. Enzyme Substrate Method, ReadyCult® Test
11. Enzyme Substrate Method, modified Colitag® Test
12. Enzyme Substrate Method, Tecta EC/TC

The above approved methods list includes methods specified in:

1. National Primary Drinking Water Regulations: Revisions to the Total Coliform Rule, Final Rule, Section 141.852, Analytical Methods and Laboratory Certification (78 Fed. Reg. 10354 – 10356 (February 13, 2013))
2. National Primary Drinking Water Regulations: Minor Corrections to the Revisions to the Total Coliform Rule, Direct Final Rule, Section 141.852, Analytical Methods and Laboratory Certification (79 Fed. Reg. 10669 – 10670 (February 26, 2014))
3. Appendix A to Subpart C of Part 141 – Alternative Testing Methods Approved for Analyses Under the Safe Drinking Water Act, Alternative Testing Methods for Contaminants List at 40 CFR 141.852(a)(5) (40 CFR Ch. I, Vol. 23, July 1, 2014 ed.), as originally published in:
 - a. Expedited Approval of Alternative Test Procedures for the Analysis of Contaminants Under the Safe Drinking Water Act; Analysis and Sampling Procedures, Final Rule (78 Fed. Reg. 32558 – 32574 (May 31, 2013))



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- b. Expedited Approval of Alternative Test Procedures for the Analysis of Contaminants Under the Safe Drinking Water Act; Analysis and Sampling Procedures, Final Rule (79 Fed. Reg. 35081 – 35096 (June 19, 2014))
- c. Expedited Approval of Alternative Test Procedures for the Analysis of Contaminants Under the Safe Drinking Water Act; Analysis and Sampling Procedures, Correction (79 Fed. Reg. 36428 – 36429 (June 27, 2014))

Enumeration of total coliforms and *E. coli* is not required by the Federal RTCR. Of the methods included in the Federal RTCR the following are established methods for enumeration of total coliforms and/or *E. coli*.

Total coliform enumeration:

1. Lactose Fermentation, Standard Total Coliform Fermentation Technique (Standard Methods 9221 B.1, B.2 (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9221 B.1, B.2-99 -06)
2. Membrane Filtration, Standard Total Coliform Membrane Filtration Procedure (Standard Methods 9222 B (20th ed.; 21st ed.), Standard Methods Online 9222 B-97)
3. Membrane Filtration, Delayed-Incubation Total Coliform Membrane Filtration Procedure (Standard Methods 9222 C (20th ed.; 21st ed.), Standard Methods Online 9222 C-97)
4. Membrane Filtration, Membrane Filtration Using MI medium (EPA Method 1604)
5. Membrane Filtration, m-ColiBlue24[®] Test
6. Membrane Filtration, Chromocult
7. Enzyme Substrate Method, Colilert[®] (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-97, -04)
8. Enzyme Substrate Method, Colilert-18[®] (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-04)
9. Enzyme Substrate Method, Colisure[®] (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-97, -04)
10. Enzyme Substrate Method, modified Colitag[®] Test

E. coli enumeration:

1. Lactose Fermentation, *E. coli* Procedure Using Fluorogenic Substrate (Standard Methods 9221 F.1 (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9221 F.1-06)
2. Membrane Filtration, MF Partition Procedure (Standard Methods 9222 G.1 c(1,2) (20th ed.; 21st ed.))
3. Membrane Filtration, Membrane Filtration Using MI medium (EPA Method 1604)
4. Membrane Filtration, m-ColiBlue24[®] Test
5. Membrane Filtration, Chromocult
6. Enzyme Substrate Method, Colilert[®] (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-97, -04)
7. Enzyme Substrate Method, Colilert-18[®] (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-04)



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8. Enzyme Substrate Method, Colisure® (Standard Methods 9223 B (20th ed.; 21st ed.; 22nd ed.), Standard Methods Online 9223 B-97, -04)
9. Enzyme Substrate Method, modified Colitag® Test